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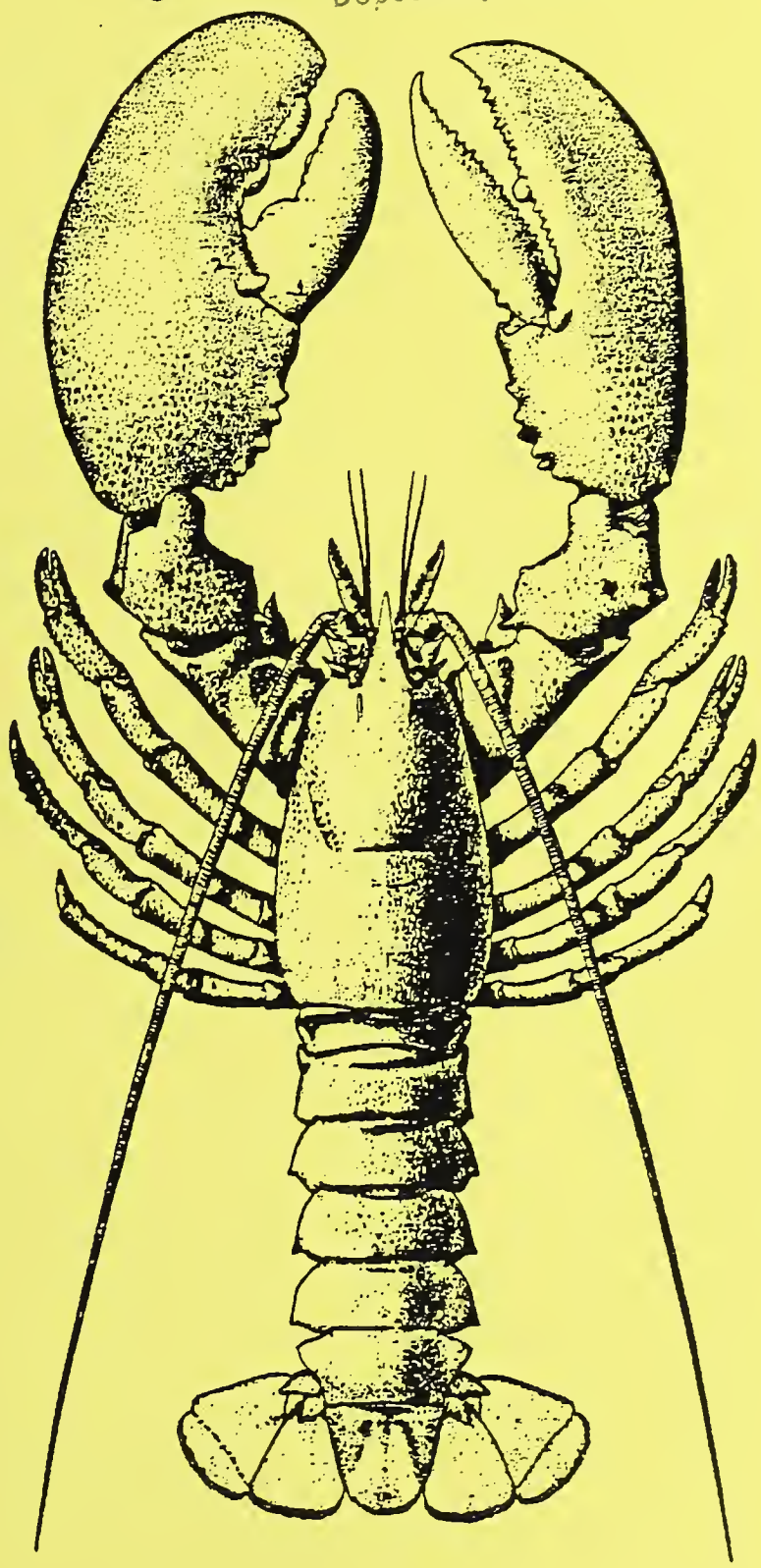
Massachusetts Lobster Fishery Statistics



Jonathan A. Pava

Thomas B. Hoopes

MASSACHUSETTS DIVISION OF MARINE FISHERIES

1997
MASSACHUSETTS
LOBSTER FISHERY
STATISTICS

by
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The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Bob Durand, Secretary
Department of Fisheries, Wildlife and Environmental Law Enforcement
David M. Peters, Commissioner
Division of Marine Fisheries
Philip G. Coates, Director

INTRODUCTION

The commercial lobster fishery of Massachusetts is the most economically important fishery conducted within the territorial waters of the Commonwealth. The overall importance of the fishery both in New England and, in recent years, the Mid-Atlantic states, has focused the attention of federal, regional and state fishery managers on this species. In the early 1970's, in an attempt to standardize management of the fishery, the federal and state governments developed an overall lobster fishery management plan under the auspices of the State-Federal Fisheries Management Program. However, with the passage of the Magnuson Fishery Conservation and Management Act in 1976, the New England Fisheries Management Council, in cooperation with the Mid-Atlantic Council, developed and implemented a management plan for the entire Atlantic Coast lobster fishery. The basis and success of any such plan is an accurate statistical database. The Commonwealth of Massachusetts, with funding from the National Marine Fisheries Service, has been collecting annual reports from licensed lobster fishermen since the early 1960's. In the past these data were used primarily for descriptive and informational purposes, and occasionally for management. With the more recent emphasis on Federal management, however, these data have provided the respective management agencies with the information they need to protect the interests of Massachusetts' lobstermen and ensure a productive fishery in the Commonwealth.

During the period 1975 - 1980, the number of coastal commercial lobster permits was limited by law to 1300, with an additional ten percent issued to proven hardship cases each year. In 1981, a statutory change mandated the establishment of a permanent waiting list from which 100 new permits were issued. Thirty special additional permits were also awarded to full-time commercial fishermen who met certain criteria. From 1982 to 1987, 80 list permits and 20 special additional permits were issued each year. In 1988, the issuance of new coastal permits was suspended. From 1988 to 1993, license transfers were allowed only within the immediate family, and if a license was allowed to expire, it was retired. In early 1993, a new regulation was promulgated by the DMF establishing broader eligibility criteria and new procedures for the transfer of Coastal Commercial Lobster Permits. As a result of these measures, the number of permits has declined from an all time high of 1,865 in 1988 to a more manageable 1,591 licenses today. The new system has also allowed for more orderly turnover in the industry. The new transfer procedures provide for transfer to employees (captains, deck hands, etc.) and persons on an established waiting list in addition to transfers within the immediate family. Only those licenses that have been actively fished for four out of the past five years according to catch reports filed with the Division may be transferred. The person to whom the permit is transferred must prove that he/she has at least one year of experience in the commercial lobster pot fishery or two years of experience in commercial fishing. All transferees must be owner/operators of the new business. Transfer activity for calendar year 1997 is described on Page 2.

This report is the thirty-first annual publication of data compiled from the catch reports of licensed lobster fishermen. Data were presented in a standardized format through 1979. In 1980, the presentation was enhanced as a result of improved collection and analysis methods. This publication represents the twelfth year in which the data processing and analysis have been completely automated. Areal data presented in this report conform to the National Marine Fisheries Service statistical reporting areas. This report does not, however, cover the scope of the Project's existing database and computational capability. Requests for expanded information, or questions concerning this publication, should be directed to the Division's Statistics Project in Gloucester, MA: (978) 282-0308.

This report has been prepared by personnel of the Division of Marine Fisheries Information Systems and Fisheries Statistics Project, funded jointly by the Commonwealth and the National Marine Fisheries Service under the Interjurisdictional Fisheries Act (Public Law 99-659). The preparation of this report would not have been possible without the cooperation of licensed lobstermen who provided the information on their annual reports. Special thanks go to Ann Spires who continues, year after year, to interpret and keypunch, with special care and accuracy, the type of reports that fishermen are likely to fill out. Thanks also go to Charlie Anderson, who heads up the project, for his help with system development and upgrades and for his suggestions concerning this publication. These two people are as important to this process as we are, and without them this publication would not be possible. The authors also wish to acknowledge the assistance of Bruce Estrella from our Lobster Biology Project and Eileen Feeney and Kevin Creighton from our permitting office.

SOURCE OF DATA

"*No person may fish for or take lobster in coastal waters or land lobster in the Commonwealth without a permit issued by the Director of the Division of Marine Fisheries.*" (Chapter 130, Mass. G.L., Section 38). Chapter 130, Mass. G.L., Section 33, requires any person so licensed to file an annual report of their catch by January 31 for the preceding calendar year. In 1980, a dual reporting system was established. Commercial lobstermen (coastal, offshore and seasonal(student)) received a detailed catch report form with their license renewal application. This report requests the following information: method of fishing; number and type of gear used; effort data (set-over days, number of trips per month, etc.); pounds of lobster caught; areas fished; principal ports of landing; and information relative to the vessels and traps used in the fishery. Recreational fishermen are asked to report on their license renewal application form the number of lobsters taken during the previous year and the maximum number of traps fished. Project personnel sort, edit, tabulate and interpret data from all reports received. Data presented in this publication are based on catch reports actually received as of October 19, 1998 and are not expanded to represent all of the permits issued in 1997.

COASTAL LOBSTER LICENSE TRANSFER

During 1993, the Division promulgated regulations to broaden the criteria for the transfer of a coastal lobster license from one individual to another. The intent of the new legislation was to create more options for lobstermen who wish to retire and leave this limited entry fishery. During calendar year 1997, the Division authorized the transfer of 59 coastal lobster licenses. Seventeen of the transfers went to 'captains' who were previously authorized to fish another holder's license and who had fished that holder's license for at least twelve months prior to transfer. Thirteen transfers were allowed within the holder's immediate family (and would also have been allowed prior to the new regulation). Twenty transfers were made directly from the holder to a sternman with a documented fishing history. Nine lobstermen advertised their coastal lobster businesses to persons on a waiting list maintained by the Division and subsequently transferred their permits. Eleven licenses were forfeited to the Division in 1997; six of these coastal lobster permits were issued directly to waiting list applicants, and the remaining five licenses were permanently retired.

EXPLANATION OF TABLES

All data presented in this publication are broken down into two basic categories: the first is **"territorial"** which represents data pertaining to all lobstering activity taking place within the territorial waters (3 mile line) of the Commonwealth (Areas 1-14 on Figure 1A); the second is **"non-territorial"** which represents all data beyond those waters (Areas 15-25 on Figure 1B). In 1990, the statistical reporting map was revised to reflect the territorial / non-territorial breakdown and to conform to the National Marine Fisheries Service's statistical reporting areas. Figures 1A and 1B show the statistical reporting areas used by the Division to collect most commercial fisheries data in the Commonwealth.

Figure 1A. 1997 Massachusetts Lobster Fishery; Statistical Reporting Map Showing Territorial Waters and Outlying Areas

Division of Marine Fisheries
DIRECTOR PHILIP COATES

MASS GIS — Massachusetts Geographic Information System
Massachusetts Executive Office of Environmental Affairs - 1993

Scale = 1:1,320,000

0 miles 10 20 30

Description of Boundaries for Territorial Areas

Between Areas	Boundaries
1 & 2	Castle Neck, Ipswich –Territorial Line
2 & 3	Gales Pt, Manchester –Territorial Line
3 & 4	Red Rock, Lynn –Territorial Line
4 & 5	Strawberry Pt, Cohasset –Territorial Line
5 & 6	High Pines Ledge, Plymouth –120 Foot Line
6 & 7	Scussett Beach, Sandwich –120 Foot Line
5, 6, 7 & 8	120 Foot Line
8 & 9	70 Degree Longitude Line
9 & 10	70 Degree Longitude Line
9 & 11	41 Degree 20 Minute Longitude Line
10 & 12	Wasque Pt, MV –Muskeget Island, Nantucket
10 & 13	Succonnesset Pt, Mashpee –Cape Pogue, MV

Between Areas	Boundaries
11 & 12	70 Degree Longitude Line
12 & 13	41 Degree 20 Minute Longitude Line
13 & 14	Elizabeth Islands and Sow & Pigs Reef to Territorial Line
14 & 15	70 Degree Longitude Line to Territorial Line

NOTE:
Parts of Area 10 (Nantucket Sound) are federal waters, but are managed by DMF.

= Territorial Waters

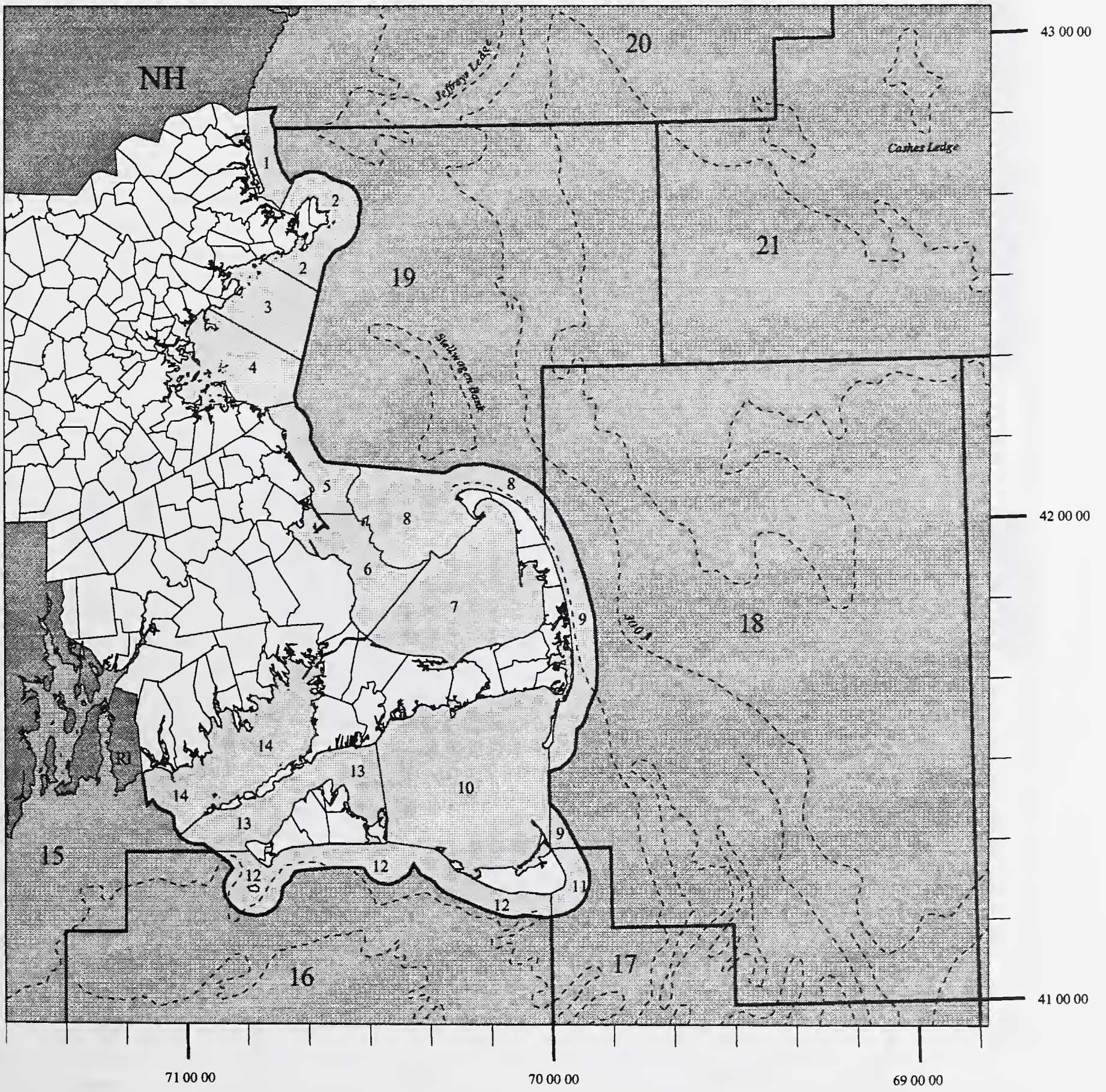
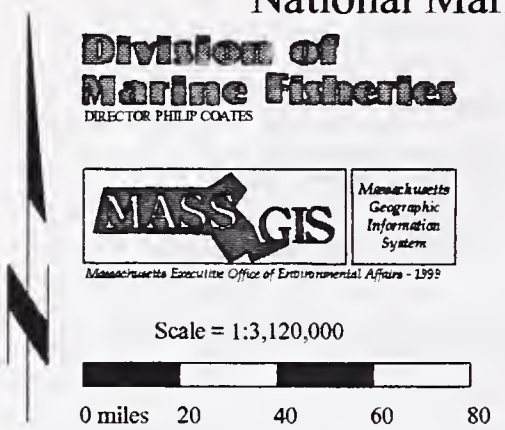


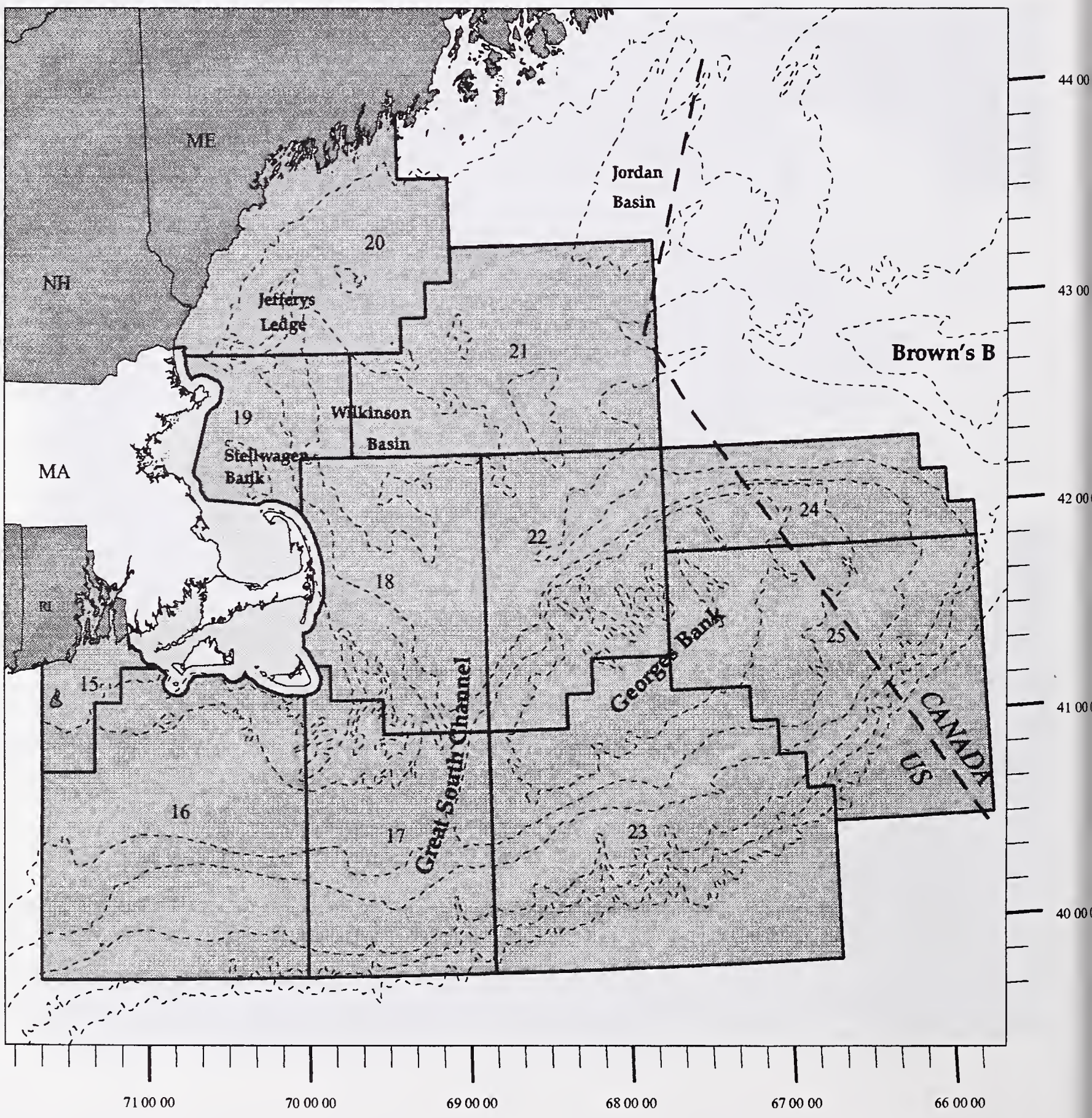
Figure 1B. 1997 Massachusetts Lobster Fishery; Statistical Reporting Map Showing Offshore Areas (which correspond to the National Marine Fisheries Service Statistical Areas)



Areas 15 through 25 are the same geographic areas as the National Marine Fisheries Service statistical areas except where the Massachusetts territorial line runs through them.

— — = Hague Line

▭ = Territorial Waters



Here is a brief definition of each lobster license type:

Coastal Commercial: Allows the holder to harvest lobster anywhere, most importantly inside territorial waters.

Offshore Commercial: Allows the holder to harvest lobster outside territorial waters only.

Seasonal Commercial: Allows the holder, if he or she is a student, to harvest lobster anywhere, but with a maximum of 25 traps and only during the months of June - September.

Non-commercial: Allows the holder to harvest lobster anywhere using SCUBA gear, a maximum of 10 traps, or a combination of both. The catch may not be sold.

Regulations promulgated by the New England Fishery Management Council in cooperation with the major lobster harvesting states of the Atlantic Coast, declared 1990 the "off-year" of a 5-year program to increase the minimum legal size from 3 3/16 in 1987 to 3 5/16 inches by January of 1992 through four 1/32 inch increases. The program was suspended at the end of 1990 and the planned increases in 1991 and 1992 were delayed pending a study of the economic impact of the program. The gauge increase program has not resumed and has been superseded by a proposed amendment to the lobster Fishery Management Plan to control fishing effort without a gauge increase.

Tables presenting number of fishermen, number of pots fished, number and value of boats used in the fishery and total landings statewide, by county and license type, and for each city and town were prepared using the catch reports submitted by commercial fishermen. In keeping with Division policy, some of the data are masked or combined to protect the confidentiality of the individual submitting the report. Data referring to the number of fishermen, number and value of gear, and number and value of boats are presented by the home port of the licensee filing the report. Pounds of lobster harvested are presented by the port of landing reported by the fishermen.

Vessel and SCUBA gear values were calculated on the basis of the fishermen's estimate of its present value and the percentage of the time it is in use specifically for lobstering. Average values were used when the information was omitted from an individual report. When fishermen reported the number of lobsters taken, rather than poundage, a conversion factor of 1.28 pounds per lobster was used to calculate poundage figures. This figure is based on information collected by the Division's Coastal Lobster Investigations Project. For information on biological (average carapace length, sex ratios, percent of egg-bearing lobster in catch etc.) and other parameters (mortality, exploitation and catch per unit of effort rates) contact this Project in Pocasset, MA at (508) 563-1779.

Where tables refer to county, the reader is referred to Figure 10.

ISSUED LICENSES AND REPORTING STATUS

Table 1 lists the number of commercial and recreational licenses issued in 1997, the dollar value of fees collected and the number that reported catching lobster. There were 2,207 commercial lobster licenses issued during 1997: 1,591 coastal, 551 offshore and 65 seasonal. Non-commercial licenses issued totaled 11,240; a breakdown of their reporting status and landings can be found in Table 6.

As of October 19, 1998, a total of 122 licensed commercial lobstermen (5.5 percent) failed to file a catch report with the Division. Of the 2,085 commercial fishermen who reported, 530 or 25.5 percent claimed they did not catch any lobster during 1997. The number of coastal licenses issued continues to decline since a 1988 moratorium on the issuance of new licenses. An annual decrease of approximately one percent per year continued in 1997 driven by fishermen leaving the fishery and the Division's policy to retire half of these licenses through attrition.

The number of offshore licenses issued remained the same in 1997. Overall compliance with catch reporting by the offshore fleet appears to be improving. Student commercial licenses have decreased in number by approximately 14 percent since 1993.

Table 1. 1997 Massachusetts Lobster Fishery; Reporting Status of Licenses Issued

License Type (Fee)	Licenses Issued	Licensing Revenue	Reported "Catching Lobster"		Reported "No Lobster Catch"		Not Reporting	
Coastal Commercial ($260)	1,591	$413,660	1,162	73%	407	26%	22	1%
Offshore Commercial ($260)	551	$143,260	354	64%	117	21%	80	15%
Seasonal (Student) Commercial ($65)	65	$4,225	39	60%	6	9%	20	31%
Non-Commercial ($40)	11,240	$449,600	7,017	62%	1,789	16%	2,434	22%
Total	13,447	$1,010,745	8,572	64%	2,319	17%	2,556	19%

Table 2. **Massachusetts Commercial Lobster Fishery; Selected Licensing Information, 1993 - 1997**

	1993	1994	1995	1996	1997	Percent Five Year Change
Coastal Licenses						
Issued	1,627	1,612	1,609	1,598	**1,591**	*-2.21%*
% Change		*-0.92*	*-0.19*	*-0.68*	*-0.44*	
"Caught Lobster"	1,195	1,194	1,190	1,179	**1,162**	
% Change		*0.85*	*-0.15*	*-0.24*	*-1.01*	
"Did Not Catch Lobster"	412	401	403	404	**407**	
% Change		*-1.76*	*0.69*	*0.94*	*1.19*	
Not Reporting	20	17	16	15	**22**	
% Change		*-14.21*	*-5.71*	*-5.60*	*47.31*	
Percent Not Reporting	1.2%	1.1%	1.0%	0.9%	**1.4%**	
Offshore Licenses						
Issued	711	648	596	551	**554**	*-22.08%*
% Change		*-8.86*	*-8.02*	*-7.55*	*0.54*	
"Caught Lobster"	479	480	439	400	**354**	
% Change		*9.95*	*-0.56*	*-1.44*	*-11.98*	
"Did Not Catch Lobster"	148	119	117	114	**117**	
% Change		*-11.78*	*6.90*	*5.39*	*2.08*	
Not Reporting	84	49	49	37	**83**	
% Change		*-36.00*	*8.72*	*-18.32*	*123.11*	
Percent Not Reporting	11.8%	7.6%	8.2%	6.7%	**15.0%**	
Seasonal (Student) Licenses						
Issued	74	89	82	65	**78**	*5.41%*
% Change		*20.27*	*-7.87*	*-20.73*	*20.00*	
"Caught Lobster"	44	49	42	40	**39**	
% Change		*-7.41*	*-14.29*	*-4.76*	*-2.50*	
"Did Not Catch Lobster"	8	15	12	7	**6**	
% Change		*55.90*	*-20.00*	*-41.67*	*-14.29*	
Not Reporting	22	25	28	18	**33**	
% Change		*-5.52*	*12.00*	*18.00*	*83.33*	
Percent Not Reporting	29.7%	28.1%	34.1%	27.7%	**42.3%**	

Note: All annual percentage changes are normalized to the number of licenses issued for each license type in each year.

LANDINGS AND VALUE

In 1997, 15,092,015 pounds of lobster were reported landed by commercial lobstermen in Massachusetts, a 1.75 percent decrease from 1996. Based on an average price of $3.26 per pound, the commercial catch was valued at $49,199,969 a 1.75 percent decrease from 1996. Figure 2. shows the weighted ex-vessel price for 1997 as derived from audits of lobstermen's records. Remarkably, the weighted average price of $3.26 remained constant at the average ex-vessel price paid in 1996. (Weighted price means that each price is weighted by the number of pounds that were paid at that price instead of taking a flat average of all prices).

The coastal license holders reported landing 12,237,839 pounds, or 81.05 percent of the commercial catch, down 2.2 percent from 1996. Of the 15,092,015 pounds of lobster landed commercially, 8,434,199 were reported taken within the territorial waters of the Commonwealth. In total pounds of lobster landed, Essex County continues to be ranked first, Plymouth County second and Barnstable County third. See Table 3 for a breakdown of pounds landed and number of fishermen by license type and county and Table 4 for a five-year comparison of selected landings and effort statistics.

Gloucester was the number one port in total pounds landed followed by Marshfield, Plymouth and Sandwich in that order. In total numbers of active commercial fishermen, Essex County ranked first with 556, Plymouth County second with 318 and Bristol County third with 252. Among the cities and towns of the Commonwealth, Gloucester ranked first in active fishermen followed by New Bedford, Plymouth and Marshfield in that order. See Tables 3 and 5, (the shaded areas in Table 5 refer to the top 10 cities in at least one of the two categories: pounds landed and number of fishermen).

Figure 2. 1997 Massachusetts Commercial Lobster Fishery

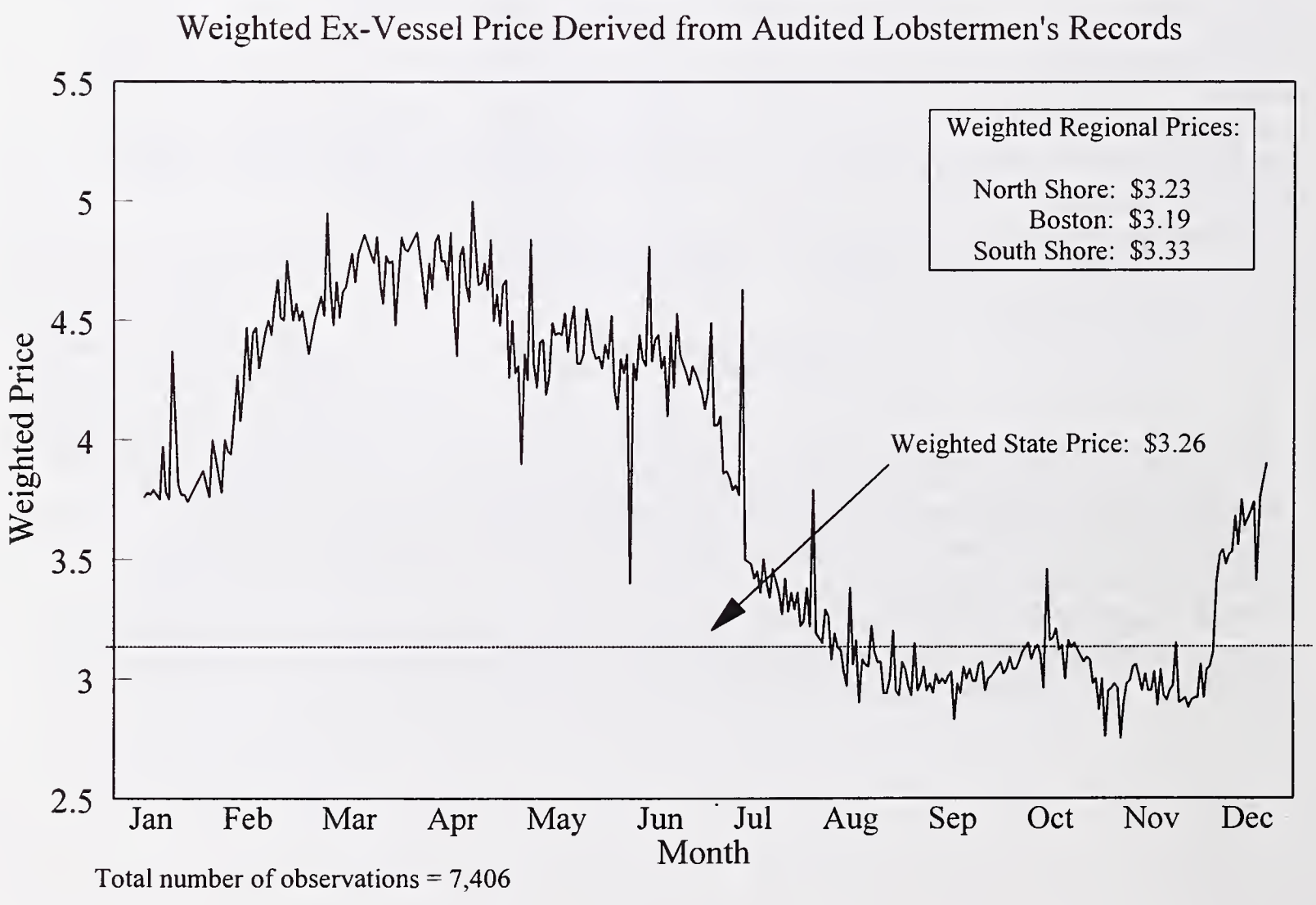


Table 3. 1997 Massachusetts Commercial Lobster Fishery; Number of Fishermen, Harvest (Lbs.) and Value of Harvest

AREA:	TERRITORIAL (Areas 1 - 14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		---- COASTAL ----		---- OFFSHORE ----			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	Potman	TOTAL * TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON- * TERRITORIAL	GRAND * TOTAL
-- COUNTY --												
BARNSTABLE												
Fishermen		146	11		8	168 +	10		9	34	53	221
Pounds		1,114,604	88,616		2,759	1,214,509	339,671		813,433	25,629	1,178,733	2,393,242
Value ($)		3,633,609	288,888		8,994	3,959,299	1,107,327		2,651,792	83,551	3,842,670	7,801,969
BRISTOL												
Fishermen		62			1	64 +	19		18	151	188	252
Pounds		446,779			257	447,061	549,072		996,722	262,408	1,808,237	2,255,298
Value ($)		1,456,500			838	1,457,419	1,789,975		3,249,314	855,450	5,894,853	7,352,271
DUKES												
Fishermen		21				25 +	8		6		16 +	41
Pounds		84,179				84,987	123,006		38,525		161,786	246,773
Value ($)		274,424				277,058	401,000		125,592		527,422	804,480
ESSEX												
Fishermen		384	8		17	414 +	64		11	64	142	556
Pounds		2,952,152	46,744		5,220	3,006,367	1,937,957		349,616	165,560	2,463,120	5,469,487
Value ($)		9,624,016	152,385		17,017	9,800,756	6,317,740		1,139,748	539,726	8,029,771	17,830,528
NANTUCKET												
Fishermen		6				8 +					2 +	10
Pounds		16,141				17,177					59,174	76,351
Value ($)		52,620				55,997					192,907	248,904
NORFOLK												
Fishermen		46				47 +					3 +	50
Pounds		380,165				380,215					70,671	450,886
Value ($)		1,239,338				1,239,501					230,387	1,469,888
PLYMOUTH												
Fishermen		254	6		6	271 +	25	5	4	13	47	318
Pounds		2,598,663	12,998		717	2,615,160	656,148	8,607	4358	25,328	694,441	3,309,601
Value ($)		8,471,641	42,373		2,337	8,525,422	2,139,042	28,059	14207.08	82,569	2,263,878	10,789,299
SUFFOLK												
Fishermen		58				59 +				19	24 +	83
Pounds		659,860				660,831				71,638	128,335	789,166
Value ($)		2,151,144				2,154,309				233,540	418,372	1,980,807
STATE TOTAL *												
Fishermen	9	977	26	7	37	1,056	133	9	49	284	475	1,531
Pounds	9,908	8,252,543	148,488	4,701	10,667	8,426,307	3,788,898	18,930	2,202,654	554,015	6,564,497	14,990,804
Value ($)	32,300	26,903,290	484,071	15,325	34,774	27,469,761	12,351,807	61,712	7,180,652	1,806,089	21,400,260	48,870,021
OUT OF STATE												
Fishermen						+					+	15
Pounds						7,891				46,633	93,320	101,211
Value ($)						25,725				152,024	304,223	329,948

* + Row and column totals may not equal the sum of the rows or columns due to masking of the data.

Value is based on an ex-vessel price of $3.26, see Figure 2.

Table 4. Massachusetts Commercial Lobster Fishery; Selected Landings (Lbs.) and Effort Statistics, 1993-97

	1993	1994	1995	1996	1997	Percent Five Year Change
Total Landings	14,425,864	16,174,818	15,949,362	15,361,045	**15,092,015**	4.62
Percent Change		12.12	-1.39	-3.69	**-1.75**	
Total Traps Fished	467,180	488,945	482,180	495,651	**489,907**	4.86
Percent Change		4.66	-1.38	2.79	**-1.16**	
Total Value	$41,979,264	$47,068,720	$51,037,958	$50,077,007	**$49,199,969**	17.20
Percent Change		12.12	8.43	-1.88	**-1.75**	
TERRITORIAL (Inside 3 Miles)						
Landings	9,124,412	10,498,316	10,040,721	9,109,902	**8,434,199**	-7.56
Percent Change		15.06	-4.36	-9.27	**-7.42**	
Value	$26,552,039	$30,550,100	$32,130,307	$29,698,281	**$27,495,489**	3.55
Percent Change		15.06	5.17	-7.57	**-7.42**	
Trap Landings	9,061,639	10,430,833	10,027,563	9,076,886	**8,419,590**	-7.09
		15.11	-3.87	-9.48	**-7.24**	
Traps Fished	361,213	365,821	358,075	366,946	**351,639**	-2.65
		1.28	-2.12	2.48	**-4.17**	
Non-Trap Landings	38,948	40,583	13,158	33,016	**14,609**	-62.49
(Gillnet, Diver)		4.20	-67.58	150.92	**-55.75**	
NON-TERRITORIAL (Outside 3 Miles)						
Landings	5,301,452	5,676,502	5,908,641	6,251,143	**6,657,816**	25.58
Percent Change		7.07	4.09	5.80	**6.51**	
Value	$15,427,225	$16,518,621	$18,907,651	$20,378,726	**$21,704,480**	40.69
Percent Change		7.07	14.46	7.78	**6.51**	
Trap Landings	4,315,675	4,634,960	4,994,645	5,331,921	**6,038,239**	39.91
		7.40	7.76	6.75	**13.25**	
Traps Fished	105,967	123,124	124,106	128,704	**138,267**	30.48
		16.19	0.80	3.70	**7.43**	
Non-Trap Landings	985,168	1,041,542	913,996	919,222	**619,577**	-37.11
(Gillnet, Trawler)		5.72	-12.25	0.57	**-32.60**	
Average Price ($) / Pound	2.91	2.91	3.20	3.26	**3.26**	
Percent Change		0.00	9.97	1.87	0.00	
Ave. Lbs. / Trap-Haul	0.6554	0.6976	0.7286	0.7296	**0.7721**	
Percent Change		6.44	4.44	0.14	**5.83**	
Ave. Lbs. / Trap	28.63	30.81	31.15	29.07	**29.51**	
Percent Change		7.62	1.11	-6.69	**1.52**	

Table 5. 1997 Massachusetts Commercial Lobster Fishery
Number of Active Commercial Fishermen and Landings by Homeport
Does Not Include Seasonal Licenses

TOWN	FISHERMEN NUMBER	FISHERMEN RANK	POUNDS TERRITORIAL	POUNDS NON-TERRITORIAL	TOTAL POUNDS	PERCENT	RANK
BARNSTABLE-YARMOUTH	8	25	42,519	446,721	489,240	3.26	11
BEVERLY-DANVERS-SALEM	**50**	**9**	**407,972**	**195,858**	**603,830**	**4.03**	**8**
BOSTON	**62**	**5**	**399,340**	**116,160**	**515,500**	**3.44**	**9**
BOURNE	12	21	35,299	0	35,299	0.24	35
CHATHAM-HARWICH	**53**	**8**	**222,348**	**214,742**	**437,090**	**2.92**	**13**
CHILMARK	22	17	60,813	122,863	183,675	1.23	23
COHASSET	35	12	367,596	59,506	427,102	2.85	15
DARTMOUTH	8	25	8,114	0	8,114	0.05	44
DENNIS-BREWSTER	19	19	85,550	0	85,550	0.57	27
DUXBURY	7	26	61,873	0	61,873	0.41	32
ESSEX	5	27	188	0	188	0.00	45
FAIRHAVEN	**46**	**10**	**160,549**	**704,444**	**864,993**	**5.77**	**5**
FALMOUTH	11	22	39,850	17,206	57,056	0.38	33
GLOUCESTER	**212**	**1**	**970,266**	**1,948,508**	**2,918,774**	**19.47**	**1**
HINGHAM	21	18	249,998	61,767	311,765	2.08	16
HULL	23	16	200,236	64,255	264,491	1.76	17
IPSWICH-ROWLEY	21	18	33,361	676	34,037	0.23	36
KINGSTON	5	27	29,759	0	29,759	0.20	38
LYNN	7	26	44,970	56,029	100,999	0.67	26
MANCHESTER	29	13	191,217	16,274	207,491	1.38	21
MARBLEHEAD	**55**	**7**	**327,874**	**103,258**	**431,133**	**2.88**	**14**
MARSHFIELD	**79**	**4**	**839,856**	**263,972**	**1,103,828**	**7.36**	**2**
MATTAPOISETT	10	23	61,108	15,826	76,933	0.51	29
NAHANT	24	15	163,591	47,224	210,814	1.41	20
NANTUCKET	8	25	16,141	59,174	75,315	0.50	30
NEW BEDFORD	**160**	**2**	**208,448**	**478,122**	**686,570**	**4.58**	**7**
NEWBURYPORT-NEWBURY	21	18	67,012	6,129	73,140	0.49	31
ORLEANS-EASTHAM	22	17	135,722	31,675	167,396	1.12	25
PLYMOUTH	**95**	**3**	**844,998**	**89,683**	**934,681**	**6.24**	**3**
PROVINCETOWN	40	11	191,622	21,999	213,621	1.43	19
QUINCY	10	23	7,935	6,907	14,842	0.10	40
REVERE	9	24	171,809	18,352	190,161	1.27	22
ROCKPORT	**60**	**6**	**409,383**	**69,620**	**479,003**	**3.20**	**12**
SALISBURY	8	25	11,153	3,485	14,638	0.10	41
SANDWICH	**40**	**11**	**420,317**	**447,308**	**867,625**	**5.79**	**4**
SAUGUS	28	14	216,813	6,884	223,697	1.49	18
SCITUATE-NORWELL	**62**	**5**	**283,142**	**217,401**	**500,543**	**3.34**	**10**
SWAMPSCOTT	24	15	155,611	20,361	175,972	1.17	24
TISBURY-EDGARTOWN-OAK BLUFFS	11	22	16,452	37,905	54,356	0.36	34
TRURO	5	27	9,185	0	9,185	0.06	42
WAREHAM-MARION	10	23	27,032	70	27,102	0.18	39
WELLFLEET	4	28	29,115	3,506	32,621	0.22	37
WESTPORT-SWANSEA-FALL RIVER	**40**	**11**	**111,345**	**586,101**	**697,446**	**4.65**	**6**
WEYMOUTH	4	28	4,630	4,528	9,158	0.06	43
WINTHROP	13	20	84,198	0	84,198	0.56	28
STATEWIDE TOTAL	**1,498**		**8,426,308**	**6,564,497**	**14,990,805**	**100.00**	
OUTOFSTATE	15		7,891	93,320	101,211		

Shaded areas denote towns which rank in the top 10 for number of fishermen or total landings or both.

RECREATIONAL LOBSTER FISHERY

Recreational statistics are shown in Table 6. Licenses issued in 1997 totaled 11,240, up slightly from 1996, with 8,806 or 78 percent, reporting that they fished for lobster. In general, reporting rates dropped slightly and the percentage of license holders fishing increased. Landings decreased by approximately 0.4 percent from 1996. The number of traps fished in the recreational fishery has risen steadily for the past few years. The number of hours dived has continued to decline from 1993 levels. Landings amounted to 336,974 pounds or only 2.2 percent of the commercial landings. It should be noted that those individuals who did not report, were not able to renew their recreational license for 1997. Twenty-two percent of the licenses in the recreational fishery have turned over in the past year; historically, this turn-over rate is not unusual.

Table 6. 1997 Massachusetts Recreational Lobster Fishery; License Status and Harvest Information

License Type:	Diver	Diver/Pot	Potman	Total	Percent
1) Number of Licenses Issued in 1997	3,683	3,175	4,382	**11,240**	
2) Number That Reported	2,734	2,656	3,416	**8,806**	***78.35%***
a) Total Number That Fished	2,111	2,074	2,832	**7,017**	***62.43%***
b) Total Number That Did Not Fish	623	582	584	**1,789**	***15.92%***
3) Number That Did Not Report	963	651	886	**2,434**	***21.65%***
					Percent Change
4) Number of Lobsters Reported Landed	33,646	69,225	160,390	**263,261**	from 1996
Pounds of Lobsters (Calculated)*	43,067	88,608	205,299	**336,974**	*0.36%*
5) Number Pots Fished		7,075	21,325	**28,400**	*1.36%*
6) Number of Hours Diving	30,445	26,201		**56,646**	*2.81%*

* Based on 1.28 Pounds per Lobster.

TERRITORIAL FISHERY

Territorial landings by commercial fishermen were concentrated in the months of July through November when 83 percent of the yearly harvest was landed. A typical yearly scenario is for catches to increase sometime in mid to late July and peak in August and September. Water temperatures rise during this time inducing growth and subsequent recruitment of previously sub-legal lobsters into the legal size category. The bulk of 1997 landings were distributed July through November with concentrated landings in September and October. Landings in 1996 reflected a more uniform distribution with concentrations August through October. See Table 7 and Figure 3.

The greatest harvest of lobster from territorial waters was from the Boston Harbor vicinity (including the outlying areas which comprise Area 4 on Figure 1A), where approximately 21% of the state's territorial harvest was caught.

Table 7. 1997 Massachusetts Commercial Lobster Fishery
Percent Monthly Territorial Harvest by License Type

Month	Coastal	Seasonal
January	1.17	0.00
February	0.51	0.00
March	0.69	0.00
April	1.34	0.00
May	2.52	0.00
June	4.97	13.33
July	14.58	42.36
August	17.57	33.19
September	18.36	11.12
October	17.72	0.00
November	14.58	0.00
December	5.99	0.00
Total	100.00	100.00

Figure 3. 1997 Massachusetts Commercial Lobster Fishery
Total Monthly Territorial Harvest for Coastal and Seasonal License Types

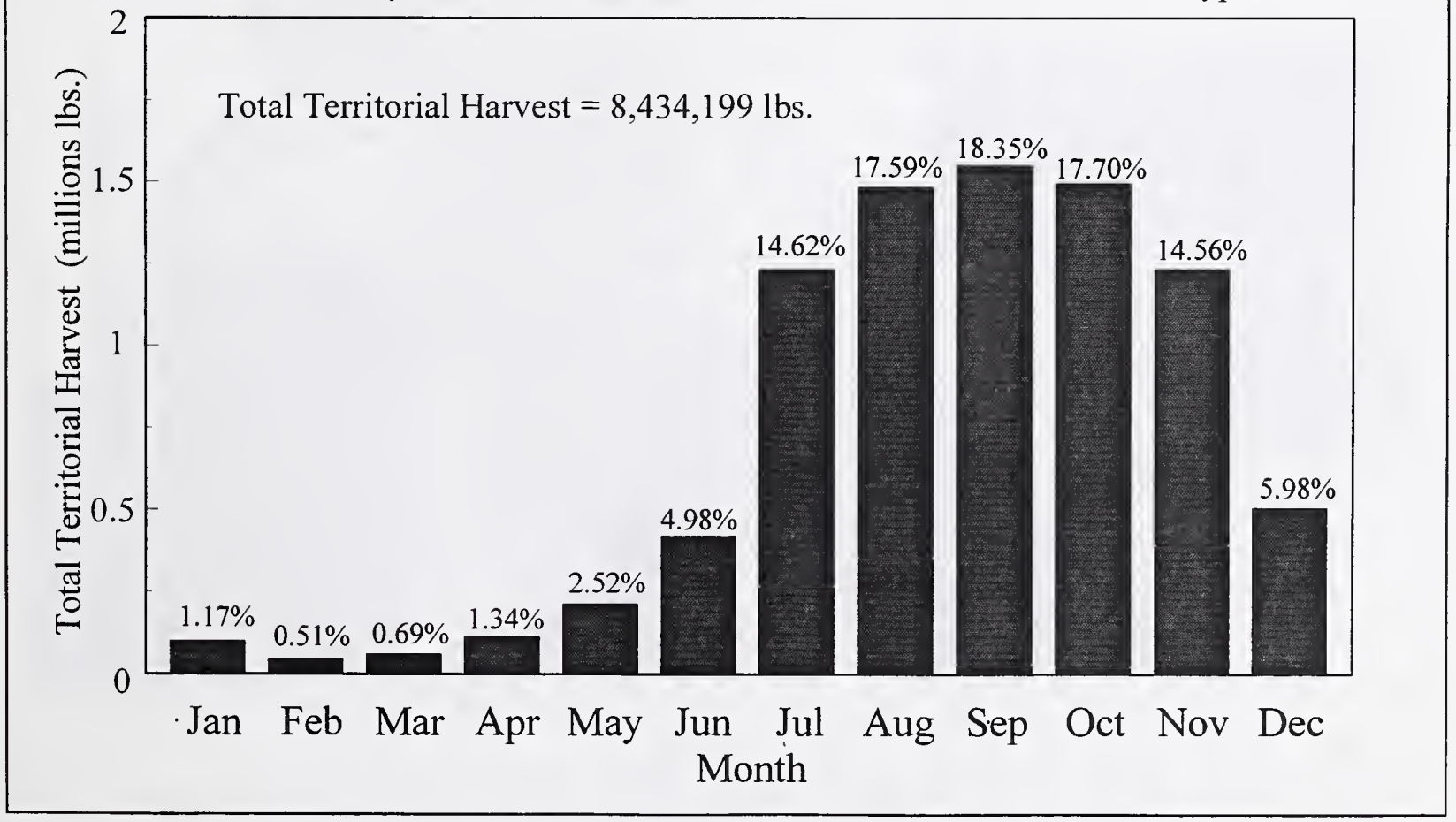


Table 8. 1997 Massachusetts Commercial Lobster Fishery
Percent Territorial Harvest by Area Fished by License Type

Area Fished	Coastal	Seasonal
1	1.92	2.59
2	16.54	39.33
3	11.47	4.88
4	21.13	0.41
5	10.94	1.08
6	7.97	8.40
7	5.69	5.33
8	11.34	2.30
9	4.23	0.00
10	0.45	33.89
11	0.02	0.00
12	1.15	0.00
13	2.77	0.49
14	4.38	1.30
Total Pounds	8,423,530	10,669

Territorial landings were down 7.2 percent in 1997. Although many areas including Boston Harbor saw notable decreases in their percentage share of territorial landings, a few areas, including Cape Ann and the Outer Cape did show increases for the year. See Figure 1A for the map of fishing areas and Figure 4 and Table 8 for a complete breakdown by area for each license type and month.

Offshore license landings are not shown in Figures 3 and 4 because license holders of this type cannot harvest lobsters within territorial waters. Offshore landings are more evenly distributed during the year with offshore potmen landings peaking in autumn and mobile gear landings peaking in the winter months. Figure 5 shows the distribution of all lobster landings by statistical reporting area.

Figure 4. 1997 Massachusetts Commercial Lobster Fishery
Total Territorial Harvest for Coastal and Seasonal License Types by Area Fished

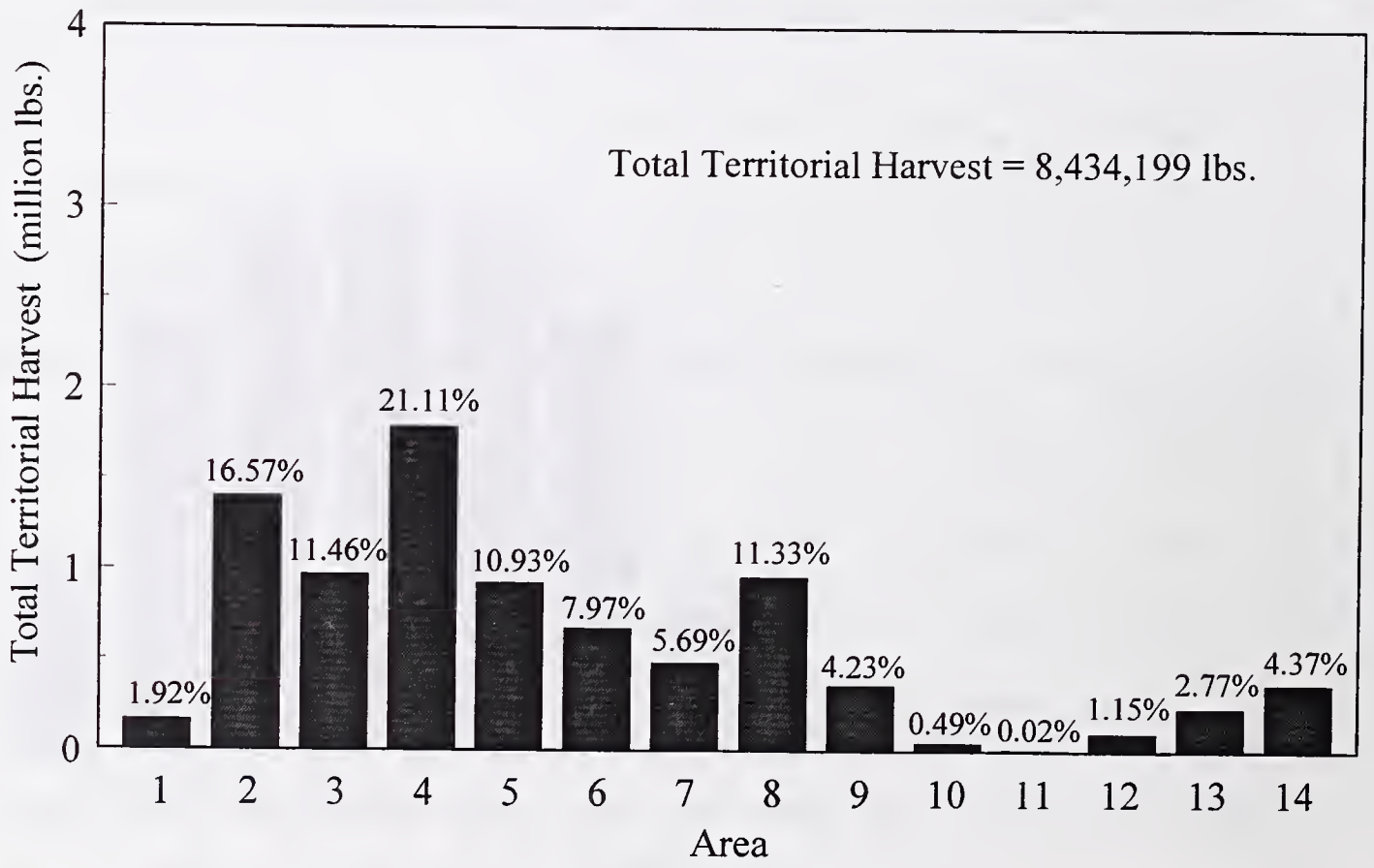
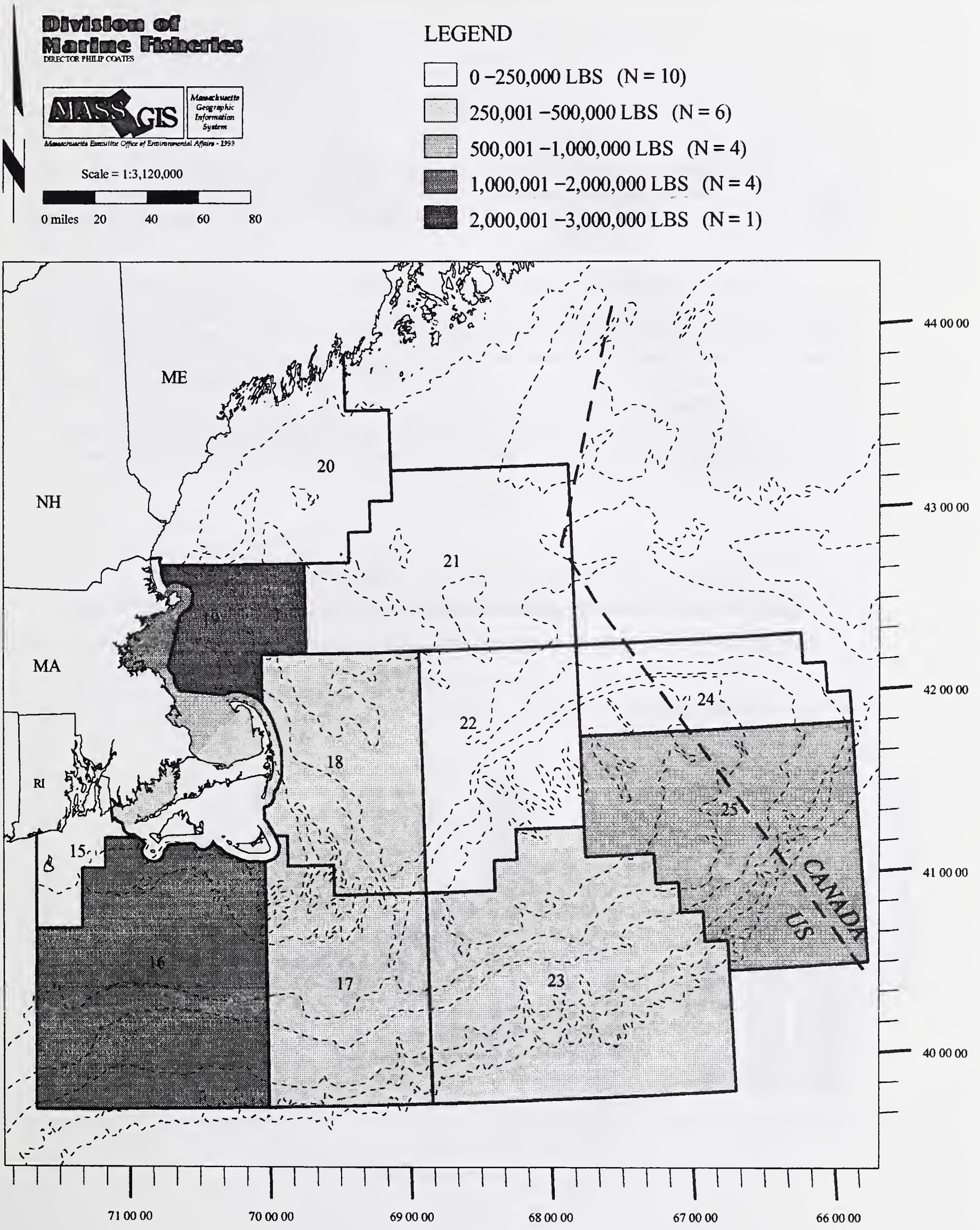


Figure 5. 1997 Massachusetts Lobster Fishery; Landings by Statistical Reporting Area –(See Figures 1A & 1B for References to Reporting Areas)



CATCH RATES

The average catch per trap haul for coastal lobstermen was .6902 pounds, an increase from 1996. For traps fished one set-over day the average was, .4342; for those fished two days, .5901, for three days, .6791, and for four days, .7418. See Figure 6 for catch effort by set-over day.

Figures 7 and 8 show the average catch per trap-haul - set-over day for area fished and month, where set-over day is factored into the effort. The average catch per trap haul - set-over day for 1997 was .2267, a eleven percent increase from 1996 and a fourteen percent increase from 1992. Overall these figures should be categorized as "estimates" since, in many cases, fishermen will estimate the number of traps hauled per trip for each month. If a fisherman leaves this information blank, the catch report is returned for corrections. If the combination of maximum traps, set-over days, average traps hauled per trip and number of trips per month is out of range for a particular month, the information is interpolated by Division statistics personnel and then factored into the analysis.

Figure 6. 1997 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort by Set-Over Day for Coastal Potmen and All Potmen

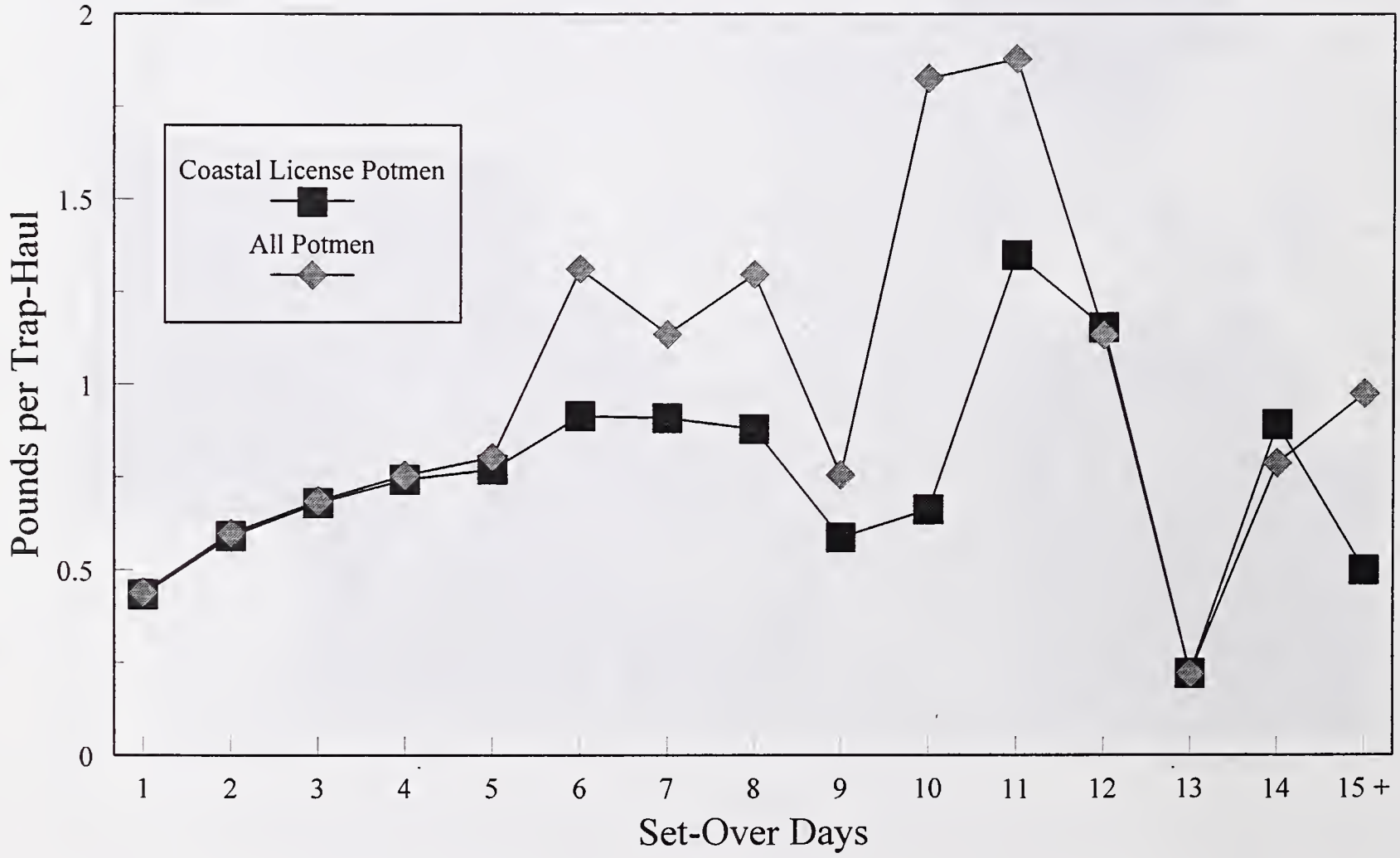


Figure 7. 1997 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort for Coastal and All Potmen by Month

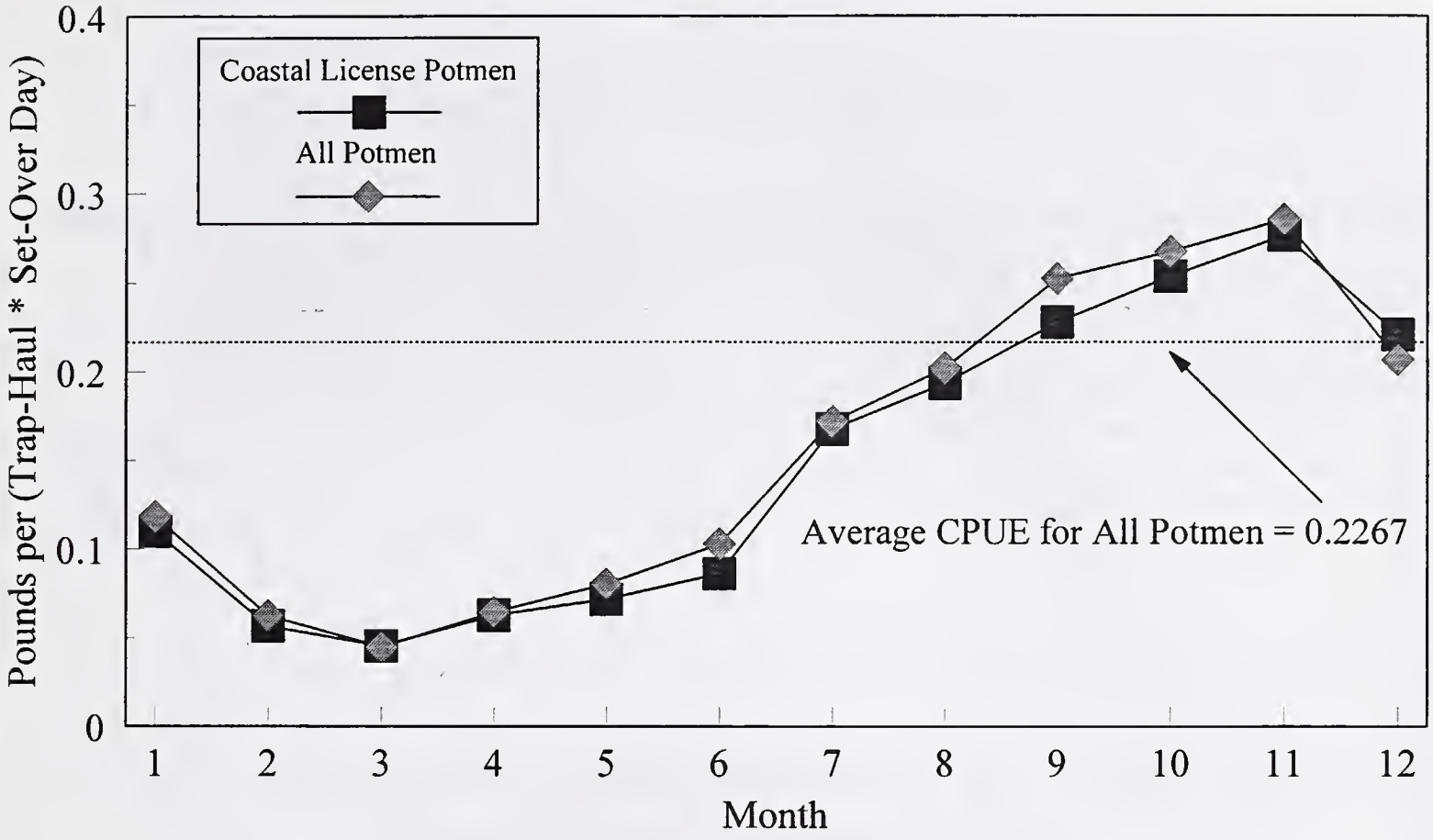
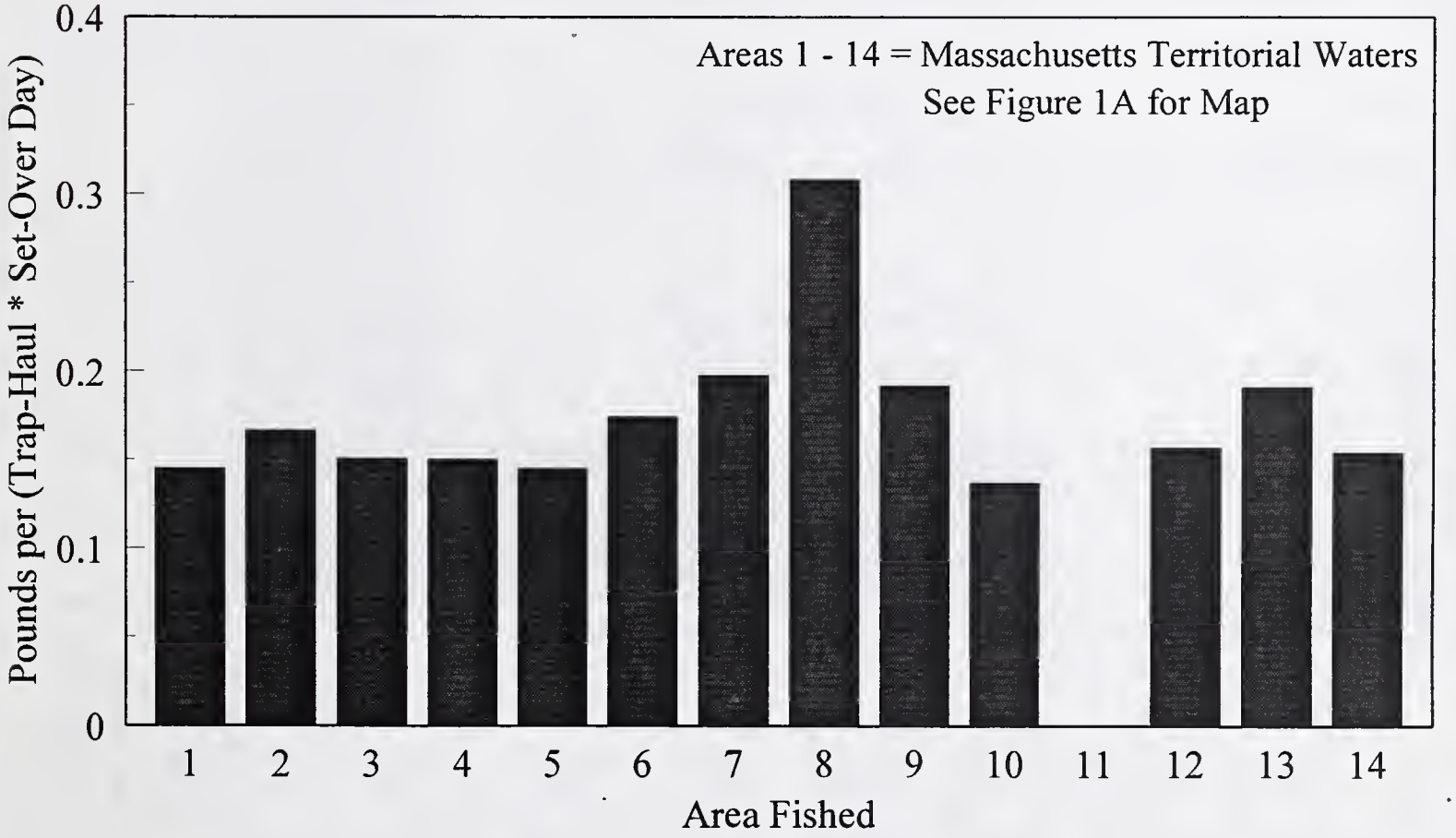


Figure 8. 1997 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort for All License Types by Area Fished



FISHING GEAR, VESSELS AND VALUE

In the commercial fishery, traps were valued at $28,185,978, diving gear at $42,159 and power and non-power boats at $65,524,673 yielding a total gear value of $93,752,810. Combined with the ex-vessel value of lobster sold, $49,199,969 this gives a total fishery value of $142,952,779. See Tables 9, 10 and 11.

Overall, 85% of the traps fished in the commercial fishery were wire framed, with 14% being wooden framed and approximately 0.6% categorized as "other". Average value (including warp and buoy) ranged anywhere from $43.52 to $103.92 with an average value of $57.64. See Table 9.

Table 9. 1997 Massachusetts Commercial Lobster Fishery
Trap Types Fished and Value by License Type

	Coastal	Offshore	Seasonal	Total Trap Type	Percent of Total
Wooden Framed Traps	64,524	4,561	99	**69,184**	14.15%
Value	$3,388,055	$473,232	$4,828	**$3,866,115**	
Value/Trap	$52.51	$103.76	$49.00	**$55.88**	
Wire Framed Traps	379,742	36,530	618	**416,891**	85.25%
Value	$21,130,000	$2,955,050	$26,918	**$24,111,968**	
Value/Trap	$55.64	$80.89	$43.52	**$57.84**	
Other Trap Types	1,963	979	25	**2,967**	0.61%
Value	$104,405	$101,740	$1,750	**$207,895**	
Value/Trap	$53.20	$103.92	$70.00	**$70.08**	
Total for License Type	**446,229**	**42,070**	**742**	**489,041**	
Value	**$24,622,460**	**$3,530,022**	**$33,496**	**$28,185,978**	
Value/Trap	**$55.18**	**$83.91**	**$45.14**	**$57.64**	

Value of trap includes warp and buoy. These figures include out-of-state fishermen.

Table 10. 1997 Massachusetts Commercial Lobster Fishery; Number of Fishing Vessels and Pots Fished

AREA:	TERRITORIAL (Areas 1-14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		--- COASTAL ---		--- OFFSHORE ---			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	(Student) Potman	TOTAL TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON-TERRITORIAL	GRAND TOTAL
-- COUNTY --												
BARNSTABLE												
Pots Fished	0	47755	3339	0	169	51263	7277	0	12829	0	20106	71369
Power Boat	3	166	16	0	4	189	11	0	9	34	54	243
Non Power Boat	0	38	7	0	0	45	5	0	1	0	6	51
BRISTOL												
Pots Fished	0	16975	0	0	12	16987	14962	0	19528	0	34490	51477
Power Boat	0	64	0	1	1	66	20	0	19	112	151	217
Non Power Boat	0	3	0	0	0	3	0	0	0	0	0	3
DUKES												
Pots Fished	0	3705	15	0	59	3744	2451	0	2310	0	4761	8505
Power Boat	0	23	1	0	3	27	11	0	6	2	19	46
Non Power Boat	0	2	0	0	0	2	1	0	0	0	1	3
ESSEX												
Pots Fished	0	124944	2081	0	312	127337	45718	0	6458	0	52176	179513
Power Boat	2	411	11	2	15	441	69	3	11	58	141	582
Non Power Boat	0	103	3	0	3	109	5	0	1	0	6	115
NANTUCKET												
Pots Fished	0	889	0	0	45	934	1359	0	0	0	1359	2293
Power Boat	0	7	0	0	2	9	1	0	0	1	2	11
Non Power Boat	0	0	0	0	0	0	0	0	0	0	0	0
NORFOLK												
Pots Fished	0	16506	0	0	0	16506	2746	0	0	0	2746	19252
Power Boat	1	45	0	0	3	49	3	0	0	0	3	52
Non Power Boat	0	19	0	0	0	19	1	0	0	0	1	20
PLYMOUTH												
Pots Fished	0	100735	1204	0	130	102069	20175	0	720	0	20895	122964
Power Boat	2	304	7	3	7	323	35	6	4	12	57	380
Non Power Boat	0	62	2	0	0	64	4	0	1	0	5	69
SUFFOLK												
Pots Fished	0	30106	0	0	0	30106	3879	0	225	0	4104	34210
Power Boat	1	65	0	0	0	66	3	1	2	21	27	93
Non Power Boat	0	6	0	0	0	6	0	0	0	0	0	6
STATE TOTAL												
Pots Fished	0	341615	6639	0	669	348946	98567	0	42070	0	140637	489583
Power Boat	9	1085	34	6	35	1170	153	10	51	240	454	1624
Non Power Boat	0	233	12	0	3	248	16	0	3	0	19	267
OUT OF STATE												
Pots Fished	0	250	0	0	0	250	0	0	0	0	0	250
Power Boat	0	2	0	0	0	2	0	0	0	12	12	14
Non Power Boat	0	0	0	0	0	0	0	0	0	0	0	0

Table 11. 1997 Massachusetts Commercial Lobster Fishery; Value of Fishing Vessels and Diving Gear

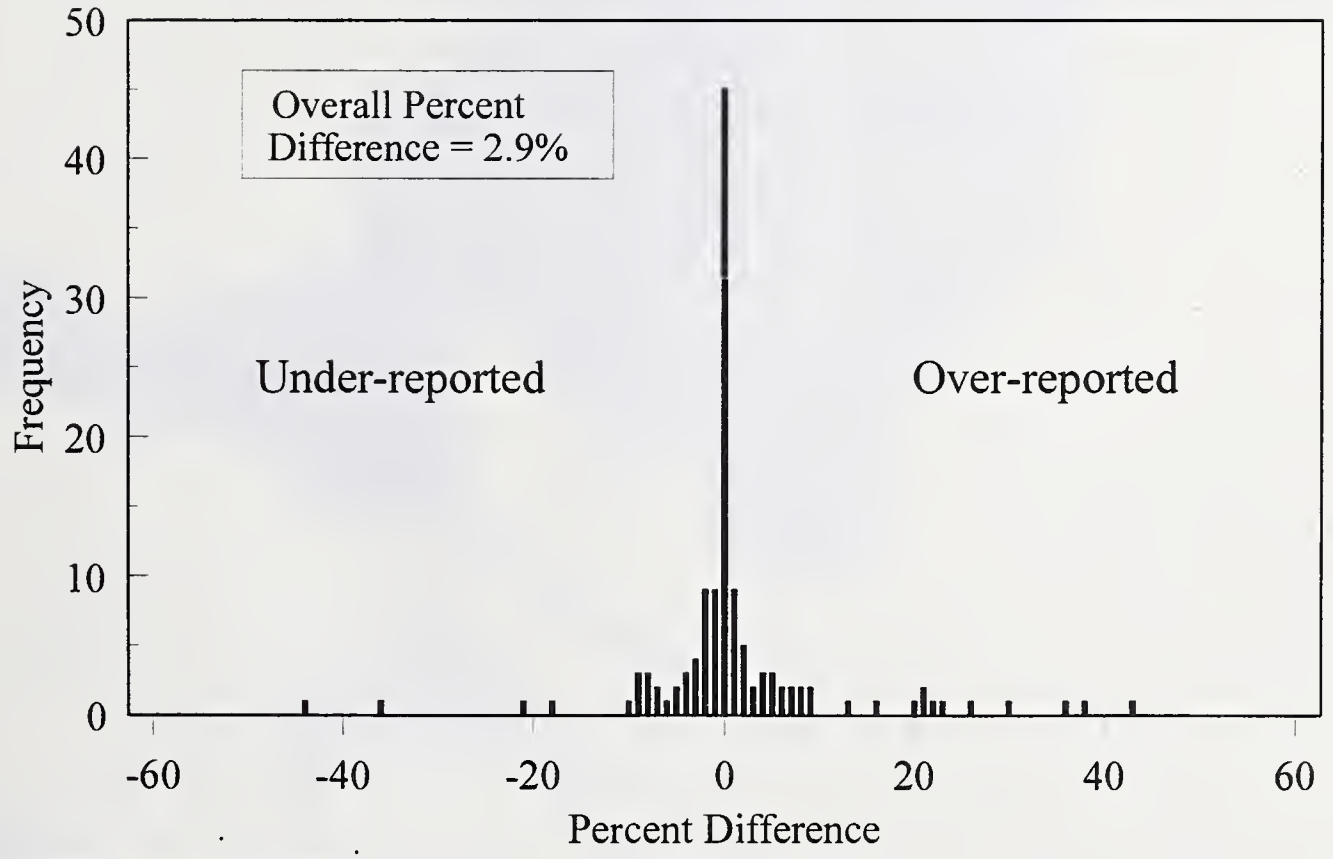
AREA:	TERRITORIAL (Areas 1-14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		--- COASTAL ---		--- OFFSHORE ---			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	(Student) Potman	TOTAL TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON-TERRITORIAL	GRAND TOTAL
-- COUNTY --												
BARNSTABLE												
Diving Gear	6875	0	17940	0	0	24815	0	0	0	0	0	24815
Power Boat	26750	4086600	658750	0	13000	4785100	968750	0	2280950	1105820	4355520	9140620
Non Power Boat	0	14101	1879	0	0	15980	625	0	2000	0	2625	18605
BRISTOL												
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	1823175	0	1250	2500	1826925	1593750	0	2332045	7027800	10953595	12780520
Non Power Boat	0	825	0	0	0	825	0	0	0	0	0	825
DUKES												
Diving Gear	0	0	2400	0	0	2400	0	0	0	0	0	2400
Power Boat	0	448940	25000	0	7750	481690	258550	0	290100	6500	555150	1036840
Non Power Boat	0	475	0	0	0	475	375	0	0	0	375	850
ESSEX												
Diving Gear	4000	0	3090	0	0	7090	0	0	0	0	0	7090
Power Boat	57500	11840000	148657	29500	48375	12124032	4934665	18800	1973240	1858102	8784807	20908839
Non Power Boat	0	43709	1875	0	360	45944	1950	0	75	0	2025	47969
NANTUCKET												
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	127500	0	0	4700	132200	150000	0	0	18000	168000	300200
Non Power Boat	0	0	0	0	0	0	0	0	0	0	0	0
NORFOLK												
Diving Gear	1200	0	0	0	0	1200	0	0	0	0	0	1200
Power Boat	0	1379050	0	0	0	1379050	359600	0	0	0	359600	1738650
Non Power Boat	0	8565	0	0	0	8565	1000	0	0	0	1000	9565
PLYMOUTH												
Diving Gear	4800	0	1254	0	0	6054	0	0	0	0	0	6054
Power Boat	27000	8052016	39800	677500	8840	8805156	1739580	173500	97150	412250	2422480	11227636
Non Power Boat	0	27999	300	0	0	28299	2400	0	450	0	2850	31149
SUFFOLK												
Diving Gear	600	0	0	0	0	600	0	0	0	0	0	600
Power Boat	4500	2441780	0	0	0	2446280	255000	800	100000	5324700	5680500	8126780
Non Power Boat	0	2450	0	0	0	2450	0	0	0	0	0	2450
STATE TOTAL												
Diving Gear	17475	0	24684	0	0	42159	0	0	0	0	0	42159
Power Boat	115750	30199061	872207	708250	85165	31980433	10259895	193100	7073485	15753172	33279652	65260085
Non Power Boat	0	98124	4054	0	360	102538	6350	0	2525	0	8875	111413
OUT OF STATE												
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	50500	0	0	0	50500	0	0	0	102675	102675	153175
Non Power Boat	0	0	0	0	0	0	0	0	0	0	0	0

VALIDITY OF DATA

Each year 150 coastal license holders are selected for audit and asked to submit the records they used to complete the harvest portion of their catch report. The Division does this to help estimate the amount of error involved in the reporting process. Selection is done randomly except when fishermen fail an audit. In these cases, they are audited again the following year. The audit was first instituted in 1977 for the 1976 catch reports. Over the last five years the lobstermen selected for audit reported landing 7,254,220 pounds. The audit of their records revealed a harvest of 7,224,527 pounds or a difference of 0.4 percent.

Last year the fishermen selected for audit reported harvesting 1,114,788 pounds of lobster on their 1997 catch reports. The audit of actual records showed total landings of 1,082,533 pounds, a difference of 32,255 pounds or 2.9 percent. Ten of the randomly selected fishermen have yet to respond to the audit request. Figure 9 shows the distribution of the percent difference between the selected fishermen's reported catch and their audited records. In general, reported landings are very well documented by dealer receipts and/or personal records, especially by the so-called "high-liners" in the fishery. Most of the lobstermen have had licenses for several years and know what is required in terms of reporting their fishing activities and have been informed of the value of accurate reporting in the development of management plans. They also know that their reported information is kept strictly confidential and published only in aggregate form. These factors all contribute to a conscientious and responsible reporting constituency.

Figure 9. Massachusetts Commercial Lobster Fishery
Frequency Distribution of the Percent Difference Between
Fishermen's Reported Catch and Their Audited Records



Number of Fishermen Audited = 140

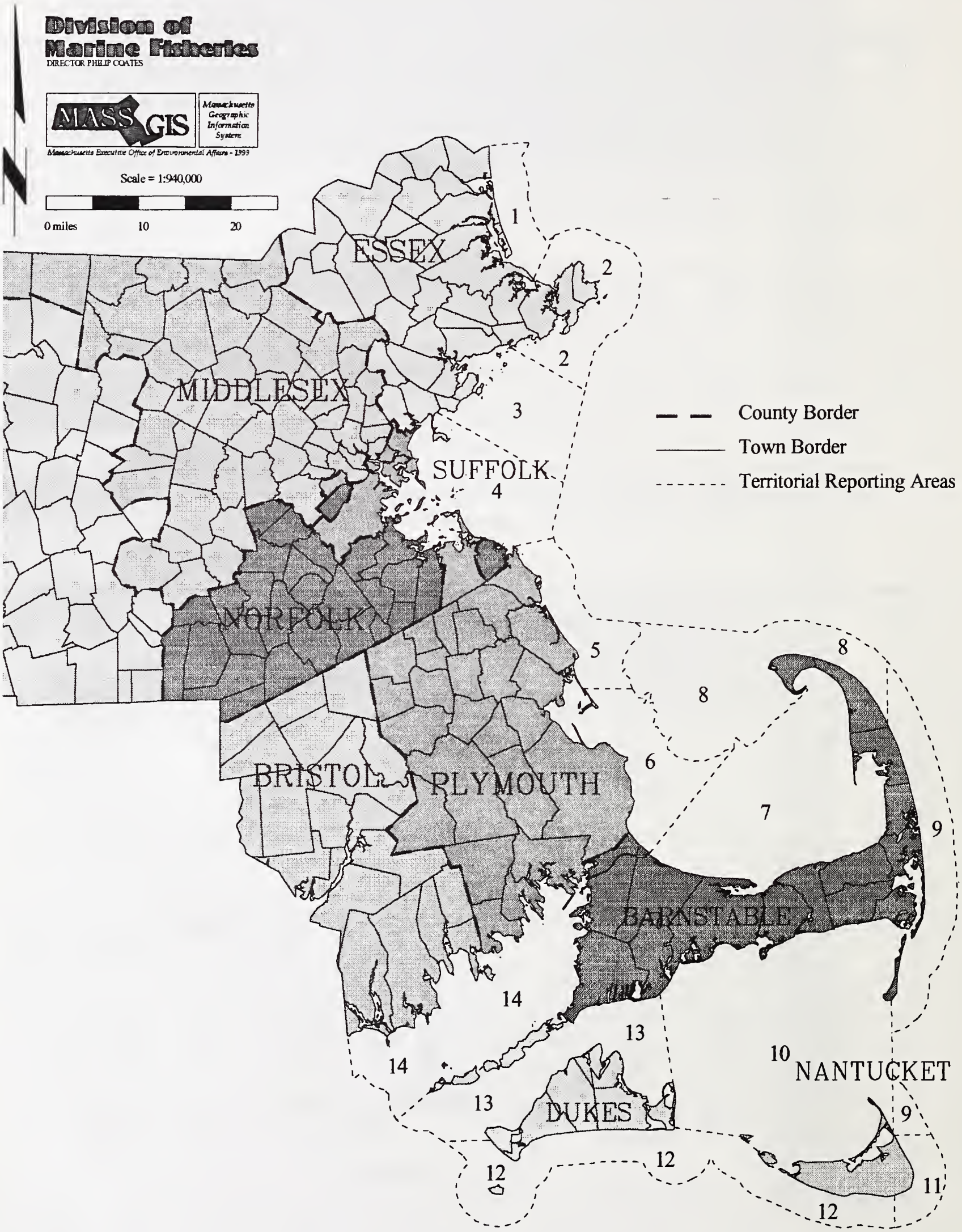



Figure 10. Coastal Map of Massachusetts Showing County Boundaries